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**AUTISM SCIENCE FOUNDATION ANNOUNCES
RECIPIENTS OF SPRING 2018 PRE- AND POSTDOCTORAL FELLOWSHIPS**

Eight Early Career Scientist and Mentor Teams Receive Funding

NEW YORK, NY (April 11, 2018) – The Autism Science Foundation, a not-for-profit organization dedicated to catalyzing innovative autism research, today announced the 2018 recipients of its annual pre- and postdoctoral fellowship grants. Three predoctoral and five postdoctoral fellowship grants will be awarded to student and mentor teams conducting research in brain function, attentional deficits, gene interactions, and social interactions of people with autism.

“We are delighted to support and encourage cutting-edge research by these impressive, young scientists whose work holds so much promise,” said Alison Singer, president and co-Founder of the Autism Science Foundation. “Each research project selected has the potential to benefit the lives of those living with autism in tangible ways, and we are eager to see the discoveries and insights that result from this work.”

The study conducted by Drs. Gabard-Durnam and Nelson of Harvard University, “Examining brain function during critical periods of development in ASD,” is co-funded by the Rett Syndrome Research Trust.

The study conducted by Drs. An and Sanders at UCSF, “Determining the nature and function of the SCN2A mutation in ASD,” is co-funded by the FamilieSCN2A Foundation.

“The FamilieSCN2A Foundation is thrilled to be partnering with the Autism Science Foundation on this important project,” said Leah Schust, president of the FamilieSCN2A Foundation. “SCN2A is one of the leading single gene causes of autism and other neurodevelopmental disorders. In a time when research is critical to the discovery of causes and potential treatments of rare diseases, genetic disorders, and autism, this partnership is a vivid example of the community-driven effort to improve the lives of all those affected.”

Since its founding in 2009, the Autism Science Foundation has funded more than \$3 million in grants, including pre- and postdoctoral fellowships, medical school gap year research fellowships, three-year early career awards, treatment grants, undergraduate summer research grants, research enhancement mini-grants, and travel scholarships to enable stakeholders to attend the International Society for Autism Research (INSAR) Annual Meeting.

The following pre- and postdoctoral projects were selected for 2018 funding:

Autism Science Foundation's 2018 Predoctoral Fellowship Grant Recipients

Amy Ahn, University of Miami

Mentor: Daniel Messinger, PhD

Automating and accelerating the autism diagnostic process

New technology and advanced methodology have given scientists tools to better understand and measure the symptoms of autism. This may eventually lead to automated, clinical evaluations that would speed up the diagnostic process. This study will use a head-mounted camera to track early social behaviors during a structured evaluation for autism with a clinician. Researchers will evaluate an equal number of three-year-old boys and girls to determine if there are sex differences in these early social behaviors and social affect severity. This video and objective measurement will provide a way to measure and quantify ASD symptoms that may be useful for both categorization of different features of autism as well as developing gender-specific referral guidelines.

Cara Keifer, MA, Stony Brook University

Mentor: Matt Lerner, PhD

Explaining how the ASD brain works during social interactions

Youth with autism interpret, understand, and respond to the world differently than adults. This is especially evident in social situations when people are presented with various social cues. This project will look at brain activity before, during, and after the presentation of different social cues to better understand how and why the brains of people with autism work differently. The goal is to help clinicians understand how small differences in the way a person's brain responds to social interaction could contribute to large differences in the way they interact with other people. Additionally, identifying the specific stages at which individuals with ASD demonstrate differences in social information processing will enable scientists to tailor treatments to have the biggest impact on behavior.

Julia Yurkovic, Indiana University

Mentor: Daniel Kennedy, PhD

Evaluating features of attention in ASD during real world interactions

In order to better understand the attentional problems of those with autism, which are usually most apparent during naturalistic, unconstrained real-world interactions, researchers in this study will use a wearable eye tracking device to monitor attention in toddlers with autism. Specifically, researchers will be able to look at where the eyes are pointed when toddlers play with each other, with toys, and with their parents. Scientists will also be able to determine how toddlers coordinate their attention with their parents'. The results will improve targeted attention-based early intervention programs for ASD.

Autism Science Foundation's 2018 Postdoctoral Fellowship Grant Recipients

Joon An, PhD, University of California at San Francisco

Mentor: Stephan Sanders, PhD

Determining the nature and function of the SCN2A mutation in ASD

SCN2A is a gene that encodes a sodium channel that is critical for communication between brain cells, and has been shown to be important for both ASD and infantile seizures. This study will first use an animal model to examine how disruption of SCN2A function at different times in development affects other genes known to play a role in autism. Dr. An will also work with collaborators at UCSF to compare

the behavioral and medical features of people with this mutation and autism compared to those without an autism diagnosis. This will help identify the more precise role of this mutation in autism. Eventually, this model could be used to test therapies that might improve symptoms in both people with the SCN2 mutation and those with other causes of ASD.

Laurel Joy Gabard-Durnam, PhD, Harvard University

Mentor: Charles Nelson, MD, PhD

Examining brain function during critical periods of development in ASD

There are particular periods in brain development that are more critical to the development of autism spectrum disorders. These critical periods represent times when the brain is particularly plastic. In order to understand these critical periods in neurodevelopmental disorders, Dr. Gabard-Durnam will analyze measures of brain activity and function at multiple times across development in children with autism and Rett Syndrome, and compare them to brainwave activity measurements from those who are typically-developing. This includes periods of regression in girls with Rett syndrome. This research will help inform the timing and biological targets for effective interventions and improve the quality of life for individuals with neurodevelopmental disorders and ASD.

Aaron Gordon, PhD, UCLA

Mentor: Daniel Geschwind, MD, PhD

Identifying the converging genetic pathways across different forms of ASD

Due to advances in genetic technologies, more genetic mutations that lead to ASD are being identified. These newly-discovered, rare mutations are most often associated with higher levels of cognitive impairment and medical comorbidities. Little is known about how these genes affect brain development, how they interact with other autism genes, or how they lead to different outcomes in autism. This study will use stem cells to generate neurons from individuals with these rare genetic mutations to compare them to individuals with autism who don't have these new-found mutations. This will allow scientists to investigate the development of brain cells and see commonalities and differences across the different forms of autism and enable the development of better therapies for all people with an autism diagnosis.

Whitney Guthrie, PhD, Children's Hospital of Philadelphia

Mentor: Robert Schultz, PhD

Developing a novel method for early screening of autism using Electronic Health Records

Although most pediatricians agree that screening for ASD at 18 and 24 months of age is needed, it is clear that additional screening methods are necessary in order to identify every child with ASD as early as possible. This research will utilize electronic health records of more than 75,000 children at 9, 18, and 30 months of age, both with and without a later diagnosis of autism, to determine whether critical information on development, already available in the medical records, could help inform pediatricians of the early signs and symptoms of ASD before formal screening would occur. This could eventually lead to a clinical tool embedded in health records that would alert providers to a child's risk for ASD, and allow clinicians to better evaluate children with these early developmental risk indicators.

Christine Ochoa-Escamilla, PhD, University of Texas Southwest Medical Center

Mentor: Peter Tsai, MD, PhD

Understanding the genetic influence of brain circuitry in ASD

Through studying the brains of people with autism, scientists have discovered a decrease in the number of Purkinje Cells, which are a type of neuron in the cerebellum. So far, animal models have not been able to selectively turn these particular neurons on and off to understand how they connect to other

brain areas, like the cortex, to contribute to ASD. This study will utilize newer genomic technologies to deactivate Purkinje Cells in mice with a gene mutation associated with ASD. This will identify specific brain connections that are relevant for ASD and accelerate the design of targeted therapies based on particular brain circuits. Dr. Ochoa-Escamilla will continue her science training at UTSW by expanding on a project she began through an ASF fellowship last year.

About the Autism Science Foundation:

The Autism Science Foundation (ASF) is a 501(c)(3) public charity. Its mission is to support autism research by providing funding to scientists and organizations conducting autism research. ASF also provides information about autism to the general public and serves to increase awareness of autism spectrum disorders and the needs of individuals and families affected by autism. To learn more about the Autism Science Foundation or to make a donation, visit www.autismsciencefoundation.org.

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